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Oral presentation

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*Publication date:*
2011

*Document Version*
Early version, also known as pre-print

# EXPLORING A GLOBAL COLLECTION OF MARINE BACTERIA FOR NEW ANTIBACTERIAL COMPOUNDS

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The increasing problem of antibiotic resistance stresses the need for new types of antibiotic compounds and therapeutic strategies. Microorganisms have long proven themselves as an attractive source of new natural products; however there is a continuous need to explore new groups of microorganisms to discover new types of structures.

We have a global collection of 519 marine culturable bacteria that display antibacterial activity [**1]**. The bacteria belong mainly to: *Vibrionaceae*, *Pseudoalteromonas*, and the *Roseobacter* clade. All of these bacteria are Gram negative, bacteria known notoriously to produce low yields and be less prolific in their production of secondary metabolites [**2**]. As a result, many of these species have never been investigated for their chemistry.

To evaluate the many bacteria, we have set up a systematic framework for assessing the bacterias potential to produce new and interesting molecules with a range of bioactivities in bacterial and cell line systems [**3,4,5]**.

Through this presentation, I will describe an 'explorative solid-phase extraction' (E-SPE) strategy used at DTU for extract prioritization, dereplication, and mapping of biological activities [**6]**. The E-SPE protocol involves a set of SPE columns with orthogonal selectivities that in a fast and easy way indicates the size, charge, and polarity of the active components of an extract. This is used for optimization of purification schemes to improve our yields from Gram negative bacteria for NMR and biological testing. Also, I will give examples of how the method is used as a prefractionation step to reveal masked candidates in a bioassay.

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